

UNITED STATES DISTRICT COURT
DISTRICT OF MASSACHUSETTS

TRUSTEES OF BOSTON UNIVERSITY,)
Plaintiff,)
v.) Consolidated Civil Action No.
) 12-11935-PBS
)
EVERLIGHT ELECTRONICS CO., LTD.,)
et al.,)
Defendants.)

)
TRUSTEES OF BOSTON UNIVERSITY,)
Plaintiff,)
v.) Civil Action No. 12-12326-PBS
)
)
EPISTAR CORPORATION, et al.,)
Defendants.)

)
TRUSTEES OF BOSTON UNIVERSITY,)
Plaintiff,)
v.) Civil Action No. 12-12330-PBS
)
)
LITE-ON INC., et al.,)
Defendants.)

MEMORANDUM AND ORDER

April 26, 2016

Saris, C.J.

INTRODUCTION

The defendants, Everlight and Epistar, have asserted the affirmative defense of laches, alleging that they should not be liable for any pre-suit damages because the plaintiff, Trustees of Boston University (BU), unreasonably delayed in filing suit

against them, and this delay caused the defendants material economic prejudice. BU responds that any delay was excusable due to its other active patent cases and because the defendants have not proven that they would have changed their infringing behavior had BU sued earlier. BU has moved for prejudgment and postjudgment interest and an entry of judgment. After a jury trial and two-day laches bench trial, the Court finds for the plaintiff on the issue of laches and ORDERS all defendants to pay the jury-awarded damages, plus prejudgment and postjudgment interest.¹

FINDINGS OF FACT

I. Background of Litigation

On November 11, 1997, the U.S. Patent and Trademark Office (PTO) issued patent number 5,686,738 ('738 patent), entitled "Highly Insulating Monocrystalline Gallium Nitride Thin Films," naming Theodore Moustakas as the inventor and BU as the assignee. Gallium Nitride (GaN) thin films are common components of blue light-emitting diodes (LEDs). LEDs are semiconductor devices that emit light when charged with an electric current. LEDs containing GaN thin films can be found in light bulbs,

¹ Only Epistar and Everlight have raised the equitable defense of laches. With respect to laches, references to the defendants pertain only to these two entities. All three defendants—Epistar, Everlight, and Lite-On—oppose an award of prejudgment interest. With respect to interest, references to the defendants pertain to all three entities.

laser printers, optical-fiber communication networks, and flat-panel displays of handheld devices and televisions.²

On March 26, 2001, BU and Cree, an LED manufacturing company, entered into an exclusive license agreement, which required Cree to implement a program to enforce the '738 patent against infringers, but did not require Cree to bring more than one infringement lawsuit at a time. From May 3, 2001 until the current case was filed, Cree and BU were engaged in six lawsuits to enforce the '738 patent:

Case Name	Date Filed	Date Terminated
BU v. Nichia Corp.	5/3/2001	11/26/2002
BU v. Nichia Corp.	5/3/2001	10/30/2001
BU v. AXT Inc.	6/10/2003	4/19/2004
Cree, Inc., v. Bridgelux, Inc.	9/11/2006	8/21/2007
Bridgelux, Inc. v. Cree, Inc.	10/17/2006	1/7/2009
Honeywell Int'l Inc. v. Philips	4/30/2008	3/6/2009

Docket No. 1669 at 3. Starting in March 2011, BU and Cree began discussions to amend their license agreement so that BU could prosecute infringement actions on its own behalf. On January 30, 2012, BU and Cree ended their exclusive license arrangement and BU took back control of the '738 patent.³

Epistar and Everlight are different corporations with close ties. In 2006, Everlight's chairman of the board, Robert Yeh,

² Trustees of Boston Univ. v. Everlight Elecs. Co., 23 F. Supp. 3d 50, 53 (D. Mass. 2014).

³ For the purposes of laches, BU concedes that any action taken by Cree or notice received by Cree will be imputed to BU. See Bench Trial Tr., Docket No. 1682 at 106.

was also the vice chairman of the board of Epistar. From 2006 to 2012, Everlight was one of Epistar's largest single shareholders and controlled over \$100 million in Epistar stock. Everlight held itself out to customers as being vertically integrated with Epistar and used this relationship for marketing purposes. Epistar is indemnifying Everlight for all legal expenses in defending this suit because Epistar's chips are inside of the accused Everlight LED packages.

On October 17, 2012, BU filed the present action against Everlight and, on December 14, 2012, filed suit against Epistar. Epistar and Everlight continued selling the accused infringing products after BU filed suit.⁴

II. Epistar

A. Plaintiff's Knowledge of Infringement by Epistar or its Predecessors

One key issue in the laches inquiry is when the plaintiff knew about the defendants' infringement. In some circumstances, the plaintiff's knowledge of infringement by a defendant's predecessor company can start the period of delay with respect to laches. In April 2002, in a draft internal presentation, BU's current head of licensing, Michael Pratt, wrote that United

⁴ Although BU argues that each of the different corporate entities within Everlight must prove laches, it did not adequately highlight how these differences would alter this Court's analysis. Because this Court finds for the plaintiff, it need not address BU's argument.

Epitaxy was part of a large group of companies in the LED market whose products infringed on the '738 patent. In August 2005, United Epitaxy merged with Epistar, a merger covered widely in industry journals. There is no evidence that Epistar continued to manufacture any of United Epitaxy's products post-merger.

On February 7, 2005, Cree sent a letter accusing another company, Epitech, of infringing the '738 patent. In the following months, the parties engaged in additional written correspondence regarding Cree's allegations. On October 25, 2005, Cree terminated the exchange in a letter advising Epitech that it "will vigorously enforce its patent rights against Epitech if Epitech manufactures, uses, offers to sell or sells its infringing LEDs in the United States." PTX 1520.

In October 2010, representatives of Cree and Epistar met for the first time to discuss licensing Cree's LED patent portfolio, which included the '738 patent. In these discussions, Cree never accused Epistar of infringing the '738 patent.

B. Prejudice to Epistar

The second key issue in a laches inquiry is whether the defendant suffered any harm caused by the plaintiff's delay in filing suit. On September 28, 2006, Epistar spent \$322 million to merge with Epitech. Meng Kuo, the director of Epistar's intellectual property division, never discovered Cree's letter accusing Epitech of infringement, despite her direct involvement

in the due diligence for the merger. She credibly claimed that if Epistar had known about a possible infringement claim, it would have negotiated a lower price or contractual provisions protecting it from liability. Significantly, one month after Epistar acquired Epitech, it discontinued all of Epitech's products.

In April 2007, Cree accused Epistar's customer, Everlight, of infringing on the '738 patent. Because the accused products contained Epistar chips, Everlight immediately turned to Epistar for help defending against Cree's accusation. At this point, no court had construed the claim term "grown on" in the '738 patent. Epistar interpreted the term to mean that the buffer layer was the first layer immediately above the sapphire substrate. According to Epistar, the first layer in its chip was single crystalline aluminum nitride. The '738 patent claims a non-single crystalline gallium nitride buffer layer, so Epistar took the position that its chips did not infringe the patent and provided a report to that effect to Everlight in January 2008. Around this time in early 2008, Epistar became aware of Cree's ongoing litigation with Bridgelux, one of Epistar's customers, over the '738 patent. In August 2008, the court in the Bridgelux litigation construed the term "on" to mean "positioned

indirectly or directly above.⁵ Remarkably, Kuo testified that she never read that court's claim construction order, and later learned that Cree and Bridgelux had settled the case. Significantly, even after this Court construed the term "grown on" to mean "formed indirectly or directly above,"⁶ Epistar still maintained that the gallium nitride layer in its chips, located above the aluminum nitride layer, was single crystalline and did not infringe. Epistar insisted on this noninfringement position throughout the trial.

In 2007, Epistar had only \$48,913 in accused sales which increased to \$47.4 million in 2011. From 2011 to 2013, Epistar's sales and shipments of GaN LED chips to the United States accounted for less than 0.2% of its worldwide sales. When BU sued Epistar in 2012, it did not alter its production or sales methods to avoid infringement. Kuo testified that because the patent was set to expire in 2014, there was little financial incentive for Epistar to adjust its supply relationships, design around the '738 patent, or seek a licensing agreement after BU sued. However, Epistar, through its business relationship with Everlight, knew in 2007 that Cree had accused its chips of infringing on the '738 patent. Epistar did nothing to change its

⁵ BridgeLux, Inc. v. Cree, Inc., No. C 06-6495 PJH, 2008 WL 3843072, at *12 (N.D. Cal. Aug. 15, 2008).

⁶ Trustees of Boston Univ. v. Everlight Elecs. Co., 23 F. Supp. 3d 50, 60 (D. Mass. 2014).

behavior, even though seven years were left on the life of the patent. This Court finds that the primary reason that Epistar did not change its behavior was its persistent belief it did not infringe.

III. Everlight

A. Plaintiff's Knowledge of Infringement by Everlight or its Predecessor

In May 2004, Cree accused Fairchild Semiconductor of infringing the '738 patent, but never followed up on its accusation. At the time of Cree's accusation, Everlight manufactured LED products for Fairchild based on Fairchild's specifications and Fairchild sold these products all over the world. In order to cut out the middleman, Everlight acquired Fairchild's LED business assets in early 2006. Cree learned of the acquisition through press releases. Bernd Kammerer, then the chief operating officer of Everlight Americas, was in charge of the acquisition of Fairchild. He did not uncover Cree's accusation of infringement during the due diligence process leading up to the acquisition. He credibly claimed that, had he known of the accused infringement, he would have attempted to negotiate a lower purchase price, an indemnity agreement, or a

contractual provision limiting Everlight's post-acquisition liability.

On April 18, 2007, in a meeting between representatives of Cree and Everlight, Cree provided Everlight with a Powerpoint presentation accusing Everlight of infringing the '738 patent. After this initial meeting, Everlight reached out to Epistar, its chip supplier, for assistance in defending against Cree's allegations. Epistar ordered independent testing of its accused LED chips and commissioned an IP law firm to provide an infringement opinion and to represent Everlight in discussions with Cree. Cree and Everlight continued their correspondence and, on January 16, 2008, Everlight provided Cree with the noninfringement analysis developed by Epistar in the form of a Powerpoint presentation. In that presentation, Everlight represented to Cree that, from 2002 to 2007, Everlight had only \$4,194 in U.S. sales.

After the January 2008 meeting, Cree and Everlight reached a business solution, whereby Everlight agreed to buy more Cree chips. However, Cree never agreed to not file suit, and did not waive any of its infringement claims against Everlight. Nonetheless, from early 2008 to the filing of the present suit,

Cree did not take any action against Everlight for its infringement.

B. Prejudice to Everlight

In 2007, Everlight had total accused sales of \$13.4 million which increased to \$24 million in 2012. This expansion included developing an estimated 80 to 130 new LED packages every year that utilized GaN LED chips. During these years, Everlight invested approximately \$10 million to \$16 million per year in the research and development of new GaN LED packages. From 2007 to 2013, Everlight's sales to the United States accounted for less than 5% of its worldwide GaN LED package sales.

Since Everlight began purchasing GaN LED chips, it has purchased from several different suppliers including Epistar, Toyoda Gosei, Cree, and various Chinese companies. Cree manufactures noninfringing LED chips using a silicon carbide substrate. Everlight regularly alters its production line to adapt to chips from different suppliers using different substrates, a process which usually takes eight to ten weeks to complete. Silicon carbide chips, unlike the sapphire chips in the accused LED products, are used in high-performance applications, and are much more expensive.

DISCUSSION

I. Laches

"Laches is cognizable under 35 U.S.C. § 282 (1988) as an equitable defense to a claim for patent infringement." A.C. Aukerman Co. v. R.L. Chaides Constr. Co., 960 F.2d 1020, 1028 (Fed. Cir. 1992). "In a legal context, laches may be defined as the neglect or delay in bringing suit to remedy an alleged wrong, which taken together with lapse of time and other circumstances, causes prejudice to the adverse party and operates as an equitable bar." Id. at 1028-29.

[T]o invoke the laches defense, a defendant has the burden to prove two factors:

1. the plaintiff delayed filing suit for an unreasonable and inexcusable length of time from the time the plaintiff knew or reasonably should have known of its claim against the defendant, and

2. the delay operated to the prejudice or injury of the defendant.

Id. at 1032. The accused infringer must establish the facts relating to laches by a preponderance of the evidence. Id. at 1045.

"The district court should consider these factors and all of the evidence and other circumstances to determine whether equity should intercede to bar pre-filing damages." Id. at 1028. Because "[l]aches remains an equitable judgment of the trial court in light of all the circumstances . . . [it] is not

established by undue delay and prejudice," but rather those factors "merely lay the foundation for the trial court's exercise of discretion." Id. at 1036 (emphasis in original).

The availability of the laches defense was called into question recently, following the Supreme Court's decision in Petrella v. Metro-Goldwyn-Mayer, Inc., 134 S. Ct. 1962, 1974 (2014) (holding that, in the copyright infringement context, "in face of a statute of limitations enacted by Congress, laches cannot be invoked to bar legal relief"). While latching on to laches in a post-Petrella world may be holding on to a slim reed, the Federal Circuit, in a splintered *en banc* decision, preserved the defense in the patent context. See SCA Hygiene Prods. Aktiebolag v. First Quality Baby Prods., LLC, 807 F.3d 1311, 1330 (Fed. Cir. 2015). The Federal Circuit held that the statutory damages limitation in 35 U.S.C. § 286 and the laches defense embodied in 35 U.S.C. § 282 must continue to coexist.

Id.

A. Presumption of Laches

The defendants rely on a "tacking" theory to support a presumption of laches. Because BU and Cree had knowledge of possible infringement by the defendants' predecessors more than six years before BU filed suit, Epistar and Everlight argue they are entitled to a presumption of laches. BU responds that the defendants have provided no evidence that they continued

producing any of their predecessors' products after acquiring their businesses and argues that, if a presumption exists, BU has produced enough evidence to successfully rebut it.

"A presumption of laches arises where a patentee delays bringing suit for more than six years after the date the patentee knew or should have known of the alleged infringer's activity." Aukerman, 960 F.2d at 1028. "As an initial response to the defendant's evidence of at least a six-year delay, a patentee may offer proof that the delay has not in fact been six years—that is, that the time it first learned or should have known of the infringement after the patent issued was within six years" of filing suit. Id. at 1038. "If a patentee is successful on this factual issue, no presumption arises." Id.

In order to pursue a "tacking" theory, the defendants must first show that the predecessors' products were the "the same or similar" to the accused products in this case or that the earlier products "embodied the same claimed features as the accused product[s]." Symantec Corp. v. Comput. Assocs. Int'l, Inc., 522 F.3d 1279, 1295, 1295 n.9. (Fed. Cir. 2008) (ruling that, after the acquisition of the predecessor company, the plaintiff's "warning letter" to the defendant's predecessor company did not start the laches clock absent evidence that the predecessor's product was the "same or similar to any of the products in suit"); see also PACT XPP Techs., AG v. Xilinx,

Inc., No. 2:07-CV-563-RSP, 2013 WL 4736238, at *3 (E.D. Tex. Sept. 3, 2013) ("Plaintiff's delay in filing suit may be measured from the plaintiff's knowledge of a product pre-dating the accused products if that earlier product was the same or similar to the accused product and thus embodied the same claimed features as the accused product.") (internal quotation marks omitted).

For "tacking" to apply, the defendants must also show that they are the successors-in-interest to the predecessor companies the plaintiff accused of infringement. See Reese v. AT&T Mobility II, LLC, No. 2:13-CV-05198-ODW, 2014 WL 1873046, at *4 (C.D. Cal. May 9, 2014) ("Although generally personal in nature, equitable defenses are available to successors-in-interest so long as the equitable doctrine's aims are not somehow frustrated by such an application."). "The federal circuit has not, in the laches context, prescribed the standard to be applied in determining whether an alleged infringer may tack on delay periods from prior infringing activity." Enel Co., LLC v. Schaefer, No. 12-CV-1369-IEG WMC, 2013 WL 5727421, at *6 (S.D. Cal. Oct. 22, 2013) (quoting Engineered Prods. Co. v. Donaldson Co., 165 F. Supp. 2d 836, 854 (N.D. Iowa 2001) (internal quotation marks omitted)). "[S]everal courts have adopted the rule that tacking should be allowed in cases where only the ownership of the defendant-business changes hands." Id.

(internal quotation marks and citations omitted); see also Five Star Mfg., Inc. v. Ramp Lite Mfg., Inc., 44 F. Supp. 2d 1149, 1156 (D. Kan. 1999) ("A defendant may not tack on the time of another party unless there is some formal transfer of the technology and goodwill of the accused product."). Because laches "is not limited to a particular factual situation nor subject to resolution by simple or hard and fast rules," a complete transfer of corporate or financial control is not necessary for a successor to assert a laches defense available to the predecessor. See Enel Co., 2013 WL 5727421, at *4-5.

To support its "tacking" argument, Epistar relies on an internal draft report from 2002, written by Michael Pratt, the managing director of BU's office of technology development, which stated that United Epitaxy was among a group of different companies whose products infringed on the '738 patent. Epistar later merged with United Epitaxy. Similarly, Epistar highlights Cree's 2005 letter to Epitech accusing it of infringement and Epitech's later merger with Epistar. Epistar has put forth no evidence showing that it continued any of Epitech or United Epitaxy's products or that any of their products were the same or similar to the accused products in this suit. To the contrary, after Epistar acquired Epitech, Epistar "replaced all Epitech's products with Epistar's products." Bench Trial Tr., Docket No. 1681 at 143. Because Epistar failed to provide

sufficient evidence that its predecessors' products were the same or similar to the accused products in this case, this Court need not address whether Epistar was the "successor-in-interest" to either Epitech or United Epitaxy. Epistar's "tacking" argument fails.

Epistar argued that, when Cree accused Everlight of infringement in 2007, Cree knew that Epistar was one of Everlight's chip suppliers and, therefore, Cree had knowledge of Epistar's infringement. However, because Everlight had multiple chip suppliers, Epistar has not proven that, in 2007, Cree knew of Epistar's infringing activities. Cree executives first met with Epistar in October 2010 to discuss licensing Cree's LED patent portfolio, which included the '738 patent. This Court finds that Cree was aware of Epistar's infringement during these licensing discussions in October 2010, less than six years from BU filing suit, and, thus, there is no presumption of laches with respect to Epistar.

Everlight supports its "tacking" argument with evidence that, in May 2004, Cree accused Fairchild of infringing the '738 patent. Because Everlight manufactured the products Fairchild sold back in 2004 and Cree accused those products of infringing, Everlight has put forth sufficient evidence that the accused Fairchild products were the same or similar to the accused Everlight products in this case. In 2006, Everlight purchased

Fairchild's LED business assets so that it could sell directly to Fairchild's customers. Even though this was not a complete merger of corporate entities, there was still a formal transfer of Fairchild's LED business and customer base. Therefore, this Court finds that Everlight is the "successor-in-interest" to Fairchild's LED business. Because Everlight has satisfied the requirements for "tacking" and Cree knew of the Fairchild-Everlight LED business purchase in 2006, this Court finds that Cree's knowledge of Everlight's infringing activity "tacks" back to 2004, more than six years before BU filed this suit. Therefore, the presumption of laches applies with respect to Everlight.⁷

B. Unreasonable Delay

The defendants argue that BU's stated reasons for its delay in filing suit do not provide sufficient evidence that the delay was reasonable or excusable, especially since neither BU nor Cree communicated their intent to sue the defendants at any point during the delay. BU responds that, due to its other patent litigation and license negotiations, its delay in filing

⁷ As discussed below, BU successfully rebuts the presumption of laches with evidence that Everlight has not suffered any material prejudice. See Hemstreet v. Comput. Entry Sys. Corp., 972 F.2d 1290, 1293 (Fed. Cir. 1992) ("[T]he presumption of laches which arises after a defendant proves a six-year delay is a double bursting bubble which the plaintiff punctures with introduction of evidence sufficient to raise a genuine dispute as to either delay or prejudice.") (emphasis in original).

suit was reasonable and excusable. BU contends that it was not required to provide formal notice to the defendants of its intent to sue while it was engaged in other litigation.

"The length of time which may be deemed unreasonable has no fixed boundaries but rather depends on the circumstances." Aukerman, 960 F.2d at 1032. "The patentee's conduct also affects the reasonableness of the delay." Wafer Shave, Inc. v. Gillette Co., 857 F. Supp. 112, 128 (D. Mass. 1993). "A court must also consider and weigh any justification offered by the plaintiff for its delay." Aukerman, 960 F.2d at 1033. Excuses for delay which have been previously recognized include: other litigation, negotiations with the accused, negotiations with one's attorney, and extent of infringement. Id.; see also Meyers v. Asics Corp., 974 F.2d 1304, 1307 (Fed. Cir. 1992).

Although decided based on copyright, the Supreme Court acknowledged in the context of laches that the owner need not sue all infringers because "[e]ven if an infringement is harmful, the harm may be too small to justify the cost of litigation." Petrella, 134 S. Ct. at 1976 (holding that, if the rule were "sue soon, or forever hold your peace, copyright owners would have to mount a federal case fast to stop seemingly innocuous infringements, lest those infringements eventually grow in magnitude"); see also Koninklijke Philips N.V. v. Zoll Med. Corp., No. CIV.A. 10-11041-NMG, 2014 WL 2047878, at *9 (D.

Mass. May 16, 2014) ("It is well established that a patentee is not required to sue all potential infringers at once to avoid a finding of laches.") (emphasis added). "On the other hand, this does not mean that a patentee may intentionally lie silently in wait watching damages escalate." Aukerman 960 F.2d at 1033 (internal citation omitted).

"The equities may or may not require that the plaintiff communicate its reasons for delay to the defendant." Hemstreet v. Comput. Entry Sys. Corp., 972 F.2d 1290, 1293 (Fed. Cir. 1992) (quoting Aukerman, 960 F.2d at 1033). "If a defendant is, for example, aware of the litigation from other sources, it would place form over substance to require a specific notice." Aukerman, 960 F.2d at 1039.

This Court finds that Cree was not aware of Epistar's infringement until October 2010 when the two companies met to discuss licensing Cree's LED patent portfolio. It is unclear exactly when these discussions ended, but negotiations between the patentee and accused infringer are a recognized excuse for delay. See Aukerman, 960 F.2d at 1033. From January 2012 to December 2012, BU was engaged in its pre-suit investigation to determine the extent of infringement by the defendants. This Court finds that BU's two-year period of delay with respect to Epistar was neither unreasonable nor inexcusable and, therefore,

finds for the plaintiff on the issue of laches with respect to Epistar.

Cree's knowledge of Everlight's infringement "tacks" back to May 2004, when it accused Fairchild of infringement. This period of delay was eight and a half years. From April 2007 until January 2008, Everlight and Cree were engaged in discussions about possible infringement and maintained regular communications to resolve the issue. As part of those negotiations, in January 2008, Everlight represented to Cree that, from 2002 to 2007, it had only \$4,194 in U.S. sales.⁸ Cree, finding that Everlight's infringing sales represented a minuscule monetary sum, reasonably decided not to sue at this time. Although a patentee cannot "lie silently in wait," Aukerman 960 F.2d at 1033, as damages accrue, there would have been no defensible economic reason for Cree to engage in costly patent litigation over such a negligible sum at that time.

In January 2008, Cree and Everlight reached a business solution, in which Everlight agreed to purchase more Cree chips. However, Julio Garceran, Cree's chief intellectual property counsel, credibly testified that there was never such an agreement and that Cree never waived any of its infringement

⁸ BU argues that Everlight fraudulently produced this sales number to dissuade Cree from filing suit, and thus, has unclean hands. Because this Court finds for BU on laches, it need not address this argument.

claims against Everlight. While this Court finds that Everlight has failed to prove such a waiver or agreement, Everlight could reasonably have assumed Cree would not enforce its patent rights as a result of this détente. Cree did nothing to dispel this sanguinity.

So the question becomes whether the delays from May 2004 to April 2007, and from January 2008 to October 2012, were unreasonable. BU and Cree were engaged in litigation with Bridgelux and Honeywell over the '738 patent from September 2006 to March 2009. Everlight argues that this period of delay due to other litigation is inexcusable because BU never informed Everlight that it intended to file suit after the litigation concluded. While notice is not strictly required, Everlight could reasonably have relied on its business truce with Cree. Because there is no requirement that a patentee sue every infringer at once, however, the time period while BU and Cree were engaged in other litigation reasonably excuses that delay. The nine months BU spent conducting its pre-suit investigation in 2012 are also excusable. However, given BU's failure to provide any acceptable excuses for the periods from May 2004 to September 2006, and from March 2009 to October 2012, BU has failed to rebut the presumption of laches and Everlight has proven that these delays were unreasonable.

C. Material Prejudice

The defendants argue that they made substantial monetary investments in their GaN LED businesses based on their belief that their products did not infringe and, if BU had sued earlier they could have adjusted their methods of production, discontinued sales of infringing chips to the United States, secured contractual protections from customers, or simply bought noninfringing chips from other suppliers. The plaintiff responds that the defendants have failed to provide evidence that other companies could or would have sold them adequate numbers of noninfringing chips, or that it would have been financially feasible to design around the '738 patent. The plaintiff also contends that, because the sales of accused products for each defendant were a small percentage of their total sales, the defendants would not have undertaken other noninfringing efforts even if BU had sued earlier. Finally, BU argues that, at all times through trial, the defendants contended their products did not infringe and have not changed their behavior since the filing of this suit.

"Material prejudice to adverse parties resulting from the plaintiff's delay is essential to the laches defense." Aukerman, 960 F.2d at 1033. "Economic prejudice may arise where a defendant and possibly others will suffer the loss of monetary investments or incur damages which likely would have been

prevented by earlier suit." Id. "The courts must look for a change in the economic position of the alleged infringer during the period of delay." Id. (emphasis in original).

"[E]conomic prejudice is not a simple concept but rather is likely to be a slippery issue to resolve." Id. "While the Federal Circuit has not required a showing of increased capital investment to prove economic prejudice, it does require a defendant to show, at the very least, that it increased its expenditures, i.e. it spent more on marketing or development, as a result of the plaintiff's delay in filing suit." Koninklijke, 2014 WL 2047878, at *7. However, "[t]he change must be because of and as a result of the delay, not simply a business decision to capitalize on a market opportunity." Gasser Chair Co. v. Infanti Chair Mfg. Corp., 60 F.3d 770, 774 (Fed. Cir. 1995).

"A nexus must be shown between the patentee's delay in filing suit and the expenditures; the alleged infringer must change his position because of and as a result of the delay." State Contracting & Eng'g Corp. v. Condotte Am., Inc., 346 F.3d 1057, 1066 (Fed. Cir. 2003) (internal quotation marks omitted). In evaluating where to draw the line between economic prejudice and normal business expenditures, courts consider the accused infringer's conduct upon being sued or notified of possible infringement. See Koninklijke, 2014 WL 2047878, at *7. "The fact that an accused infringer continues to engage in the allegedly

infringing activity may indicate that it would not have changed its behavior if it had been sued earlier." Id. "Similarly, a court may infer that an accused infringer who maintains that the subject patent is invalid and noninfringed throughout litigation would have been unlikely to change its conduct if it had learned of infringement earlier given that it did not believe that it was liable." Id.

The Court need not address material prejudice with respect to Epistar because Epistar has failed to prove that BU's delay in filing suit was unreasonable. Even if it were unreasonable, Epistar was unable to provide sufficient detail regarding the technical or economic feasibility of adjusting its production and sales practices to avoid infringement. Additionally, even though it knew of Cree's litigation against Bridgelux in 2008 and Cree's infringement accusations against Everlight in 2007, it adhered to its noninfringement position that its chip's buffer layer was single crystalline, making it unlikely that Epistar would have changed its infringing behavior had BU sued earlier.

To show economic prejudice, Everlight points to its expansion in the GaN LED market from 2007, when it had total accused sales of \$13.4 million, to 2012, when its accused sales volume increased to \$24 million, its development of 80 to 130 new LED packages for GaN LED chips per year, and its investment

of \$10 million to \$16 million each year on the research and development of new GaN LED packages. When pressed, Bernd Kammerer could not provide the actual percentage of its costs directly attributable to designing packages for Epistar's infringing GaN LED chips or the economic impact of altering its production processes.

Kammerer testified that, had BU sued earlier, Everlight could have simply switched to noninfringing Cree chips, which have silicon carbide substrates. In response, BU persuasively points out that these Cree chips are much more expensive and designed for higher performance applications than the accused products with sapphire substrates. Silicon carbide is electrically conductive, while sapphire is not. Using a silicon carbide substrate would require a different LED package design, and would also require Everlight's customers to alter their product designs.

Although Kammerer claimed that Everlight could have simply stopped purchasing Epistar chips to avoid infringement, he admitted the close ties the two companies share, including at least one joint director on both boards and Everlight's large holding of \$100 million in Epistar stock. Everlight regularly advertised its close relationship with Epistar in promotional materials and presentations to its customers. Any reduction in Epistar's profits would have economically harmed Everlight.

Additionally, Epistar provided Everlight with its noninfringement analysis and vehemently denied any wrongdoing. Epistar had also promised to indemnify Everlight for any litigation expenses incurred based on Everlight products using Epistar's chips. Everlight relied on Epistar's noninfringement analysis without conducting its own independent testing because Epistar would foot the bill if its position proved incorrect. Armed with Epistar's noninfringement analysis, Everlight protested its innocence through trial based on a disagreement about the crystallinity of its products' layers, the Court's claim construction, and the '738 patent's validity. From 2007 to 2013, Everlight's sales to the United States accounted for less than five percent of its worldwide GaN LED package sales.

This Court finds it unlikely that, had BU sued earlier, Everlight—with its close ties to Epistar, Epistar's noninfringement and invalidity analysis, and its indemnity agreement—would have ceased purchasing Epistar chips and altered its LED package design based on such a small percentage of its total worldwide sales. Because Everlight has failed to prove a nexus between BU's delay in filing suit and any economic prejudice, this Court finds for the plaintiff on the issue of laches with respect to Everlight.

II. Prejudgment Interest

Under 35 U.S.C. § 284, a court awards the successful claimant "damages adequate to compensate for the infringement . . . together with interest and costs as fixed by the court." "[P]rejudgment interest should ordinarily be awarded." Gen. Motors Corp. v. Devex Corp., 461 U.S. 648, 655 (1983). "An award of prejudgment interest carries out Congress's 'overriding purpose of affording patent owners complete compensation' since a patentee's damages also include the 'forgone use of the money between the time of infringement and the date of judgment.'" Whitserve, LLC v. Comput. Packages, Inc., 694 F.3d 10, 36 (Fed. Cir. 2012) (quoting Gen. Motors, 461 U.S. at 655-56). "The rate of prejudgment interest and whether it should be compounded or uncompounded are matters left largely to the discretion of the district court." Bio-Rad Labs., Inc. v. Nicolet Instrument Corp., 807 F.2d 964, 969 (Fed. Cir. 1986).

Unsurprisingly, the parties disagree on nearly every aspect of prejudgment interest: whether it should be awarded at all, when it should begin accruing, and at which rate it should accrue.

First, mustering the same laches arguments rejected above, the defendants contend that interest should be denied because BU allegedly delayed in bringing suit. BU argues that the laches and interest analyses are coextensive and that the Court should

deny interest only if it finds that any delay caused the defendants material prejudice.

The Court finds that BU is entitled to prejudgment interest. The Supreme Court indicated that "it may be appropriate to limit prejudgment interest, or perhaps even deny it altogether, where the patent owner has been responsible for undue delay in prosecuting the lawsuit." Gen. Motors, 461 U.S. at 657. However, "withholding of prejudgment interest based on delay is the exception, not the rule." Lummus Indus., Inc. v. D.M. & E. Corp., 862 F.2d 267, 275 (Fed. Cir. 1988) (remanding to the district court for a finding of prejudice because district court denied prejudgment interest despite rejecting the defendant's laches defense). "[A]bsent prejudice to the defendants, any delay by [the patentee] does not support the denial of prejudgment interest." Crystal Semiconductor Corp. v. TriTech Microelecs. Int'l, Inc., 246 F.3d 1336, 1361-62 (Fed. Cir. 2001) (quoting Lummus Indus., 862 F.2d at 275). Because the Court has found that there was no unreasonable delay with respect to Epistar, and any unreasonable delay by BU did not materially prejudice Everlight, prejudgment interest is awarded here.

Second, the parties dispute when the interest clock should start ticking. BU argues that interest should begin accruing in January 2000, the date of the hypothetical negotiation; the

defendants respond that interest can accrue no earlier than the date that each of the defendants received notice of the infringement.

"When interest begins or ends is not stated" in the text of § 284 itself. Transmatic, Inc. v. Gulton Indus., Inc., 180 F.3d 1343, 1347 (Fed. Cir. 1999). "Generally, prejudgment interest should be awarded from the date of infringement to the date of judgment." Nickson Indus., Inc. v. Rol Mfg. Co., 847 F.2d 795, 800 (Fed. Cir. 1988); see also Oiness v. Walgreen Co., 88 F.3d 1025, 1033 (Fed. Cir. 1996) ("Interest compensates the patent owner for the use of its money between the date of injury and the date of judgment."). The hypothetical negotiation takes place "on the eve of infringement." LaserDynamics, Inc. v. Quanta Comput., Inc., 694 F.3d 51, 76 (Fed. Cir. 2012).

BU emphasizes that, by agreement of the parties, the jury was instructed that the hypothetical negotiation was deemed to take place "at the time prior to when infringement began" and that the jury should "determine a one-time lump-sum payment that the infringer would have paid at the time of the hypothetical negotiation for a license covering all sales of the licensed product, both past and future." Trial Tr. - Day 10, Docket No.

1600 at 30, 35.⁹ BU asserts that interest therefore began accruing in January 2000, the date the jury was to imagine the defendants paying a one-time, lump-sum payment to BU.

The defendants counter that prejudgment interest cannot be awarded for the time periods when damages are legally barred. The defendants identify two limits on patent damages that they say serve to similarly constrain an award of interest. First, § 286 states that "no recovery shall be had for any infringement committed more than six years prior to the filing of the complaint." 35 U.S.C. § 286. Second, "without adequate marking, 'no damages shall be recovered by the patentee in any action for infringement, except on proof that the infringer was notified of the infringement and continued to infringe thereafter.'"

Crystal Semiconductor, 246 F.3d at 1353 (quoting 35 U.S.C. § 287(a)). Combining both restrictions, interest began accruing for each defendant six years before this suit was filed or when the defendant had actual notice of infringement, whichever was later.

BU's argument benefits from some logical appeal, but suffers from a paucity of supporting caselaw. BU does not cite a single case in which interest began accruing from the date of a

⁹ The jury was also instructed it could award damages using a "running royalty." Trial Tr. - Day 10, Docket No. 1600 at 32. The jury chose to award a lump-sum amount.

fictional negotiation hypothesized to have taken place more than six years before suit was filed. Nor does BU supply a case in which interest began accruing before compliance with the marking or notice requirements of § 287(a).

BU is correct that interest often commences at the date of infringement, but its argument that interest should begin accruing in January 2000 misses the mark in two critical respects.

First, the parties did not stipulate to January 2000 as the date of infringement. The parties stipulated to a hypothetical negotiation taking place on that date, and while the hypothetical negotiation typically takes place "on the eve of infringement," LaserDynamics, 694 F.3d at 76, the parties did not agree when infringement for purposes of triggering damages actually began.

More importantly, the date of infringement is not the only date that matters here:

We have also been careful to distinguish the hypothetical negotiation date from other dates that trigger infringement liability. For example, the six-year limitation on recovery of past damages under 35 U.S.C. § 286 does not preclude the hypothetical negotiation date from taking place on the date infringement began, even if damages cannot be collected until some time later. See Wang Labs., Inc. v. Toshiba Corp., 993 F.2d 858, 870 (Fed. Cir. 1993). Similarly, the failure to mark a patented product or prove actual notice of the patent pursuant to 35 U.S.C. § 287 precludes the recovery of damages prior to the marking or notice date, but the hypothetical negotiation date

may nevertheless be properly set before marking or notice occurs.

Id. at 75.¹⁰

The jury was instructed accordingly. See Trial Tr. - Day 10, Docket No. 1600 at 41 ("In determining the amount of damages, you must determine when the damages began for each of the defendants. You must consider it separately. Damages commence on the dates that each of Epistar, Everlight, and/or Lite-On have both infringed and been notified of the alleged infringement of the '738 patent."). The jury was further instructed that the parties agreed "that Everlight first received notice of infringement of the '738 patent on April 18, 2007" and "that Lite-On first received notice of infringement of the '738 patent on December 14, 2012." Id. Because the parties disputed when Epistar received notice, the jury was asked to "determine the date that Epistar had actual notice of the '738 patent and the specific products alleged to infringe," noting that "filing of the complaint in this case qualified as actual

¹⁰ What, then, is the purpose of setting the hypothetical negotiation date before damages are available? The "purpose of the hypothetical negotiation framework" is "to discern the value of the patented technology to the parties in the marketplace when infringement began." LaserDynamics, 694 F.3d at 76. The goal is to establish a reasonable royalty rate where an established royalty does not exist. See Wang Labs., Inc. v. Toshiba Corp., 993 F.2d 858, 870 (Fed. Cir. 1993). And the way to establish a reasonable royalty rate is to hypothesize negotiations at the start of infringement. Id. at 869.

notice, so the damages period begins no later than December 14, 2012, when this case began." Id. at 41-42.

Damages were therefore unavailable, pursuant to § 286, before December 14, 2006—six years before the suit was filed—and, pursuant to § 287(a), before each defendant had actual notice of infringement. Interest on the damages award cannot begin accruing before the underlying damages were available. Cf. Oiness, 88 F.3d at 1033 ("[T]he trial court compensated [the plaintiff] for losses it had not yet suffered. In other words, the court granted [the plaintiff] interest for the use of its money when [the plaintiff's] money had not been used. This award violates the compensatory purpose of prejudgment interest.").

The Court agrees with the defendants that interest begins accruing for Epistar on December 14, 2006, for Everlight on April 18, 2007, and for Lite-On on December 14, 2012.¹¹

Third and finally, the parties disagree over the interest rate the Court should apply. BU proposes the Massachusetts statutory rate of 12%. In the alternative, BU requests a rate that mirrors the defendants' average cost of capital, BU's

¹¹ According to the defendants, "Epistar plans to move for judgment as a matter of law that it cannot be liable for any damages before December 2012 based on the notice to Epitech and the new and inconsistent testimony during the laches trial." Docket No. 1691 at 11. Epistar asserts that if it "prevails on that motion, prejudgment interest for Epistar would commence no earlier than December 2012 when Plaintiff sued Epistar." Id. The Court will evaluate that argument if and when a motion is filed.

average returns on investment, or the prime rate. The defendants urge the Court to apply the Treasury Bill rate.

The Federal Circuit "has recognized that the district court has substantial discretion to determine the interest rate in patent infringement cases." Gyromat Corp. v. Champion Spark Plug Co., 735 F.2d 549, 556 (Fed. Cir. 1984). The Court enjoys similar discretion "whether to award simple or compound interest." Rite-Hite Corp. v. Kelley Co., 56 F.3d 1538, 1555 (Fed. Cir. 1995).

The Federal Circuit has endorsed the use of both the T-Bill rate and the prime rate. See Laitram Corp. v. NEC Corp., 115 F.3d 947, 955 (Fed. Cir. 1997) (affirming use of T-Bill rate); Uniroyal, Inc. v. Rudkin-Wiley Corp., 939 F.2d 1540, 1545 (Fed. Cir. 1991) (affirming use of the prime rate). "The vast majority of courts award either the T-Bill rate or the prime rate as a rough estimation of what the infringed patent holder could have earned, or could have avoided paying, respectively." Mars, Inc. v. Coin Acceptors, Inc., 513 F. Supp. 2d 128, 133 (D.N.J. 2007). The T-Bill rate "represents a benchmark as the shortest term, risk-free investment available to ordinary investors." Allen Archery, Inc. v. Browning Mfg. Co., 898 F.2d 787, 789 (Fed. Cir. 1990). "The prime rate is defined as the interest rate that commercial banks charge their largest, most secure, and most

credit-worthy customers." Ratliff Decl., Docket No. 1699, Ex. 1, at 2.

The Court finds that the prime rate properly compensates BU for its foregone use of the unpaid royalty payments. See WBIP, LLC v. Kohler Co., No. 11-cv-10374-NMG, 2014 WL 585854, at *4 (D. Mass. Feb. 12, 2014) ("The Court is persuaded that the prime rate is an appropriate compromise between the Massachusetts statutory rate, which is excessive, and the minuscule Treasury Bill rate").

The Court awards interest in the amount of the relevant annual prime rates, compounded annually.¹² The interest shall be computed through entry of an Order of Judgment beginning on December 14, 2006 for Epistar, April 18, 2007 for Everlight, and December 14, 2012 for Lite-On.

III. Postjudgment Interest

The parties agree that 28 U.S.C. § 1961 governs postjudgment interest in this case. Section 1961 provides that "[i]nterest shall be allowed on any money judgment in a civil case recovered in a district court." Id. "Such interest shall be

¹² BU's interest calculations demonstrate how interest should be calculated, utilizing the relevant prime rate for each year. See Docket No. 1605, Ex. 1, at 5. For example, with respect to Epistar, the first year's interest is to be calculated using the prime rate in effect on December 14, 2006. After compounding, the next year's interest should be calculated using the rate in effect on December 14, 2007. And so on.

calculated from the date of the entry of the judgment, at a rate equal to the weekly average 1-year constant maturity Treasury yield, as published by the Board of Governors of the Federal Reserve System, for the calendar week preceding the date of the judgment." Id. "Interest shall be computed daily to the date of payment . . . and shall be compounded annually." Id.

Postjudgment interest is awarded in accordance with § 1961.

ORDER

The Court finds in favor of the plaintiff on the issue of laches. The plaintiff's Motion for Prejudgment and Postjudgment Interest (Docket No. 1604) is **ALLOWED** in part and **DENIED** in part in accordance with the above memorandum.

Pursuant to the jury verdict, Defendant Epistar is **ORDERED** to pay BU a sum of \$9,300,000 in reasonable royalty damages, plus prejudgment and postjudgment interest. Defendant Everlight is **ORDERED** to pay BU a sum of \$4,000,000 in reasonable royalty damages, plus prejudgment and postjudgment interest. Defendant Lite-On is **ORDERED** to pay BU \$365,000, plus prejudgment and postjudgment interest.

The plaintiff shall submit a proposed form of judgment conforming to this order by May 3, 2016.

/s/PATTI B. SARIS
Patti B. Saris
Chief United States District Judge